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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/733,305

12/12/2003

Suk Won Choi

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9629 7590 04/24/2007  
MORGAN LEWIS & BOCKIUS LLP  
1111 PENNSYLVANIA AVENUE NW  
WASHINGTON, DC 20004

EXAMINER

BRIGGS, NATHANAEL R

ART UNIT

PAPER NUMBER

2871

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/24/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/733,305

Applicant(s)

CHOI ET AL.

Examiner

Nathanael R. Briggs

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-8 and 14-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-8, and 14-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see pages 9-10, filed 25 January 2007, with respect to the rejection(s) of claim(s) 1, 3-8, and 14-19 under 35 U.S.C. § 102(b) have been fully considered and are persuasive. Applicant argues that Ishii does not disclose every limitation from the original claim 1, and Applicant's arguments are therefore persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Takato et al. (US 6,445,434) in view of Ishii et al. (US 6,133,974).

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-8 and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takato et al. (US 6,445,434) in view of Ishii et al. (US 6,133,974).

4. Regarding claims 1 and 8, Takato discloses an aligning method of a ferroelectric LCD (referred to hereafter as "FLCD"; see figures 2 and 17, for instance) having steps of disposing a first mask and a second mask (131; column 6, lines 32-48), each of which has opening regions (a) and blocking regions (b) arranged in alternating fashion in the vertical and horizontal direction corresponding to liquid crystal cells of the LCD (column 6, lines 11-16); injecting a ferroelectric liquid crystal (referred to hereafter as

"FLC") material within the liquid crystal panel (column 10, lines 6-9); arranging the first mask (131) having opening regions patterned on a first alignment film (14) formed on an upper plate (12) of the LCD; rubbing the first alignment film (14) of the upper plate (12) through the first mask (131) in a first direction; arranging the second mask (131) having opening regions on a second alignment film (13) formed on a lower plate (11) of the LCD; and rubbing the second alignment film (13) of the lower plate (11) along a second direction. However, Takato does not expressly wherein the first and second directions are the same.

5. Regarding claims 1 and 8, Ishii discloses an aligning method of an FLC (see figures 13 and 19, for instance) having steps of arranging a first mask (10) having opening regions patterned on a first alignment film (4) formed on an upper plate (2) of the LCD; rubbing (column 39, lines 34-41) the first alignment film (4) of the upper plate (2) through the first mask (10); arranging a second mask (10) having opening regions on a second alignment film (4) formed on a lower plate (2) of the LCD; and rubbing (column 39, lines 34-41) the second alignment film (4) of the lower plate (2) in the same direction (12c) as the rubbing direction (12d) of the alignment film (4) of the upper plate (2) through the second mask (10).

6. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the rubbing directions of Ishii in the FLC of Takato. The motivation for doing so would have been to gain improved viewing angle dependency, as taught by Ishii (column 6, lines 13-15; column 41, lines 49-54). Claims 1 and 8 are therefore unpatentable.

7. Regarding claim 3, Takato in view of Ishii discloses the aligning method of claim 1 (see figures 2 and 17, for instance), and Takato further discloses wherein each of the openings is substantially the same size as a liquid crystal cell. Claim 3 is therefore unpatentable.

8. Regarding claim 4, Takato in view of Ishii discloses the aligning method of claim 1 (see figures 1, 2, and 17, for instance) and Takato discloses the method further having steps of arranging the first mask (131) having opening regions on a first alignment film (14) formed on the upper plate (12) of the LCD; photo-exposing the first alignment film (14) of the upper plate (12) with an ultraviolet ray (column 14, lines 1-6) through the first mask (131); arranging the second mask (131) having opening regions on a second alignment film (13) formed on the lower plate (11) of the LCD; and photo-exposing (column 10, lines 7-15) the second alignment film (13) of the lower plate (11) through the second mask (131). Claim 4 is therefore unpatentable.

9. Regarding claim 5, Takato in view of Ishii discloses the aligning method of claim 4 (see figures 1, 2, and 17, for instance), and Takato further discloses wherein each of the openings (a, b) is substantially the same size as the liquid crystal cell. Claim 5 is therefore unpatentable.

10. Regarding claim 6, Takato in view of Ishii discloses the aligning method of claim 1 (see figures 1, 2, and 17, for instance), and Takato further discloses wherein the opening and blocking regions (a, b) in the first (131) and second (131) masks are arranged in an alternating fashion (column 6, lines 4-10). Claim 6 is therefore unpatentable.

11. Regarding claim 7, Takato in view of Ishii discloses the aligning method of claim 1 (see Takato figures 1, 2, and 17; Ishii figures 13 and 19, for instance), and Ishii discloses the method further having steps of phase-transitioning the FLC material within the LCD from isotropic to nematic phase by lowering temperature of the LCD (column 39, lines 44-51); and phase-transitioning the FLC material within the LCD from a nematic phase to a smectic C phase by further lowering the temperature of the LCD (column 3, lines 41-50; column 39, lines 60-62). Claim 7 is therefore unpatentable.

12. Regarding claims 14-15, Takato in view of Ishii discloses the aligning method according to claim 1 (see figures 1, 2, and 17, for instance), and Takato further discloses wherein the LCD has first regions (a) corresponding to the opening regions (a) of the first mask (131) and second regions (b) corresponding to the opening regions (b) of the second mask (131), the first regions (a) and the second regions (b) are respectively aligned in different directions (column 6, lines 32-39). Claims 14-15 are therefore unpatentable.

13. Regarding claims 16-17, Takato in view of Ishii discloses the aligning method of claim 1 (see figures 1, 2, and 17, for instance), and Takato further discloses wherein the first regions (a) and the second regions (b) are alternately arranged in a vertical direction and horizontal direction of the LCD. Claims 16-17 are therefore unpatentable.

14. Regarding claims 18-19, Takato in view of Ishii discloses the aligning method of claim 1 (see figures 1, 2, and 17, for instance), and Takato further discloses wherein the first regions (a) and the second regions (b) are substantially the same size as a liquid crystal cell of the LCD. Claims 18-19 are therefore unpatentable.

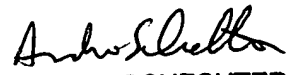
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathanael R. Briggs whose telephone number is (571) 272-8992. The examiner can normally be reached on 9 AM - 5:30 PM Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nathanael Briggs  
4/9/2007

  
ANDREW SCHECHTER  
PRIMARY EXAMINER